DANGERS OF THE AFTER-DARK WONDERLANDS: PART B - A STUDY OF THE IMPACT OF PHYSICAL ENVIRONMENT DESIGN ON NIGHTCLUB VIOLENCE

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Abstract: Violence in nightclubs is a serious problem that has the Australian government launching multimillion dollar drinking campaigns. Research on nightclub violence has focused on identifying contributing social and environmental factors, with many concentrating on a variety of specific issues ranging from financial standpoints with effective target marketing strategies to legal obligations of supplying alcohol and abiding regulatory conditions. Moreover, existing research suggests that there is no single factor that directly affects the rate violence in licensed venues. As detailed in the review paper of Koleczko and Garcia Hansen (2011), there is little research about the physical environment of nightclubs and which specific design properties can be used to determine design standards to ensure/improve the physical design of nightclub environments to reduce patron violence. This current study seeks to address this omission by reporting on a series of interviews with participants from management and design domains. Featured case studies are both located in Fortitude Valley, a Mecca for party-goers and the busiest nightclub district in Queensland. The results and analysis support the conclusions that a number of elements of the physical environment influence elevated patron aggression and assault.

Keywords: Nightclub Violence, Bar/Nightclub Design, Environmental Psychology, User Behaviour, Compliance

1 INTRODUCTION

People have become increasingly concerned about the problems of violence in society but why do higher levels of violence occur in nightclubs despite the established patterns of behaviour that dictates how we socialise and act? As detailed in Koleczko and Garcia Hansen (2011), researchers have focused on identifying social and situational factors that may contribute to violence from a government perspective, focusing on a variety of specific issues ranging from financial standpoints with effective target marketing strategies to legal obligations of supplying alcohol and abiding regulatory conditions. Limitations in existing research have provided strong grounding for exploratory research as there has been minimal involvement of the built environment and architecture professions, with most research conducted from a non-design point of view. Furthermore, previous studies have not discussed or proceeded with investigations into the design process of nightclub environments. The main aim of this study was to understand how people experience and respond to the physical environment of nightclubs and how these spaces influence their behaviour.

This study is significant in gaining an understanding on how specific elements of the physical environment of nightclubs have an impact on elevated patron aggression and assault. However, due to the explorative nature of this project findings will be utilised to suggest issues and problems that can be further studied. The focus of this study is, therefore to create awareness among the design industry, venue managers, the hospitality industry and future venue owners, that more in-depth research about discerning which specific physical environmental variables influence patron safety which would lead to the reduction of aggression and assault in licensed venues.

2 METHODOLOGY

Qualitative methods including semi-structured interviews were chosen to illuminate how the participants from the management and design domains perceive which specific design elements within nightclub environments influence patron aggression and assault. This approach is the first step in understanding the problem as limited research has focused on the design of physical environment, thus an exploratory research approach is the most suitable option. This study was guided by the data collected, rather than by a-prior hypotheses, taking into account that analysis of the data led to identifying emerging themes that will be presented in results. By adopting a research approach that alternated between sampling, data collection and data analysis, a qualitative investigation was conducted into the determinants of patron violence.

2.1 Participants

A list of licensed premises provided by consulting professionals was screened to include one large; and one small premises, given the explorative nature of the study. The Fortitude Valley area within Brisbane was selected as it is a Mecca for party-goers and the busiest nightclub district in Queensland. Site visits were used to document venue layout, line-ups, age and demographic of patrons, type of music played, venue capacity and operating hours. During and following site visits, semi-structured interviews were carried out. Participants for the interviews were selected with the aim that a designer and venue manager would represent each of the selected premises to ensure that comparable data could be gathered. To ensure in-depth responses to interviews selected participants had significant experience within the bar and nightclub industry and held correspondingly senior management positions (variously described by titles such as ‗Venue Manager', or ‗Practice Director'). In total, the participants interviewed were; one practicing interior designer and one practicing architect (both aged 30 – 55); and two venue managers (aged 25 – 35).

2.2 Case Studies

The sample of premises included licensed venues in Fortitude Valley, Brisbane, Australia, that operate primarily as drinking establishments during the late evening hours, which serve as entertainment venues by young people. Excluded from the sampling were restaurants and banquet halls frequented mainly by middle aged and elderly people such as bowling clubs, businessmen's clubs, and gold clubs. These venues have strict membership rules that exclude young people or anyone else from entering in off the street and their primary function is not as a

nightclub or bar. Of the two nightclubs used as case study for this research, the first case study (A) premises was a large-capacity venue with a max capacity of 1847 patrons. The purpose-built, entertainment complex comprises of 3 levels and 5 bars, playing commercial music including RnB and dance, and caters for a demographic of 18- 30 year olds. Licencing hours are from 10pm to 5am, Monday to Sunday however, the venue generally only operates Friday and Saturday, unless there is a specified event. The second study (B) premise in contrast is a small venue with a max capacity of 360 although management rarely let in more than 330 patrons. This 2 level, 2 bar venue showcases live music and DJs seven nights a week and caters for a broad demographic. Licencing hours are from 5pm to 5am, Monday to Sunday, yet operating hours during the week vary depending on scheduled acts and patron attendance. These two contrasting venues were selected in order to investigate whether the atmosphere of the establishment, based on aesthetic, can affect type of patrons who use a club and also their behaviour. Furthermore, the difference in size, venue type and patron demographic allowed for a study of comparable characteristics of the risk factors associated with the physical environment and their opposing influences on patron aggression and assaults.

2.3 Procedures and Measures

In total, 4 semi-structured interviews were conducted, with a mean duration of approximately 45 - 60 minutes. The majority of the interviews were conducted on a one-to-one basis in the participants' place of work (typically within a nightclub or office) excluding the interior designer who was interviewed at a café and one of the venue managers who followed up by a guided tour on-site. This allowed for easy reference to many available design elements and for informal observation of the participants working culture and practices. Each interview was motivated by a single overarching question: *which design elements of the physical environment impact or lead to patron aggression?* In answering this question attention was focused on identifying particular features either negative, positive or that compromised the physical environment. Furthermore, all discussion focussed on defining from a design perspective the physical environmental variables that influence patron violence with questions such as: *Are there elements of the design that hinder management and security?* and *are there any 'pinch points' – such as obstacles that restrict movement?* Towards the end of each discussion, the participants were invited to provide further contributions on the research topic in general. Each interview was digitally recorded with the interviewee's permissions and later transcribed. Verbatim transcripts were coded using a thematic framework for analysis, which was partly determined and based on the study aims and objectives. To ensure anonymity in the findings sections that follow, the legends accompanying quotations refer to the domain in which interviewees were associated with; either design (DES) or management (MAN) domain (Tab. 01).

TABLE 01: Participants and their domain

Domain	Acronym	Job Role	Number
Design	DES	Architect Interior Designer	1 1
Management	MAN	Venue Manager	2

3 RESULTS

The main aim of this study was to understand how people experience and respond to the physical environment of nightclubs and how these spaces influence their behaviour. More precisely, the aim was to explore the current gap in studies by addressing a) the design qualities, and b) from a design perspective the specific physical environmental variables that influence patron safety and could lead to the reduction of aggression and assault in licenced venues. The thematic analysis took into account the above aim and it identified both physical environmental characteristics of three key design elements (point of entry, layout and circulation, and lighting), and design management factors (design process and compliance), that play a major role as probably causes of increased levels of patron aggression and violence. All three of the themes that concern the physical environment (point of entry, layout and circulation, and lighting) have been examined in previous research however, details were limited as findings were only briefly listed and did not investigate how they influence patron violence in relation to aspects of the physical layout of nightclubs.

3.1 Physical Environmental Characteristics

The physical environmental characteristics of an establishment includes factors such as the size and layout, circulation and the location of critical facilities such as the bar which will affect factors such as crowding and noise levels, the tidiness, cleanliness, ventilation and lighting of the establishment.

3.1.1 Point of Entry

From initial discussions, it was apparent that the majority of participants for this study acknowledged that the greatest number of fights were likely to break out at the point of entry into a nightclub. It was also stated that this was dependent on the type of venue taking into account, its location and the demographic (and their associated psychology/behavioural traits) that frequented the area. One participant commented that:

> *"You can't always assume who your clientele is. You can have a good understanding of the demographic but you'll ultimately never know who that person is who walks through that door."* (DES)

Participants reflected that in most cases, nightclubs would anticipate a queue to get in and there would be numerous people walking in and out at the same time which could prove difficult to monitor patron behaviour and types, if a *"one in/ one out kind of arrangement"* (MAN) in the form of a separate exit and entry is not available. This was considered to be an ideal arrangement as it allows for flexibility in terms of circulation as a main point of access for patrons into the venue.

When discussing optimal locations for points of entry both management and designers were aware of the complexities involved. They described the various constraints such as site limitations and compliance to building codes that impact the point of entry in terms of certification and building approval, one participant commented:

> *"so we are understanding the constraints before any real design work is done. Knowing what kind of license needed to achieve in terms of the licensing and the DA [development approval]…"* (DES)

The participants from the design domain stated that compliance at times imposed a challenge when trying to design attractive points of entry, knowledgeable of the fact that the success of a nightclub heavily relies on aesthetics and ambience and yet poor planning would negate circulation at the point of entry. A participant from the design domain stated that:

> *"…the point of entry is where all the trouble is and so typically in bars and also they want to be able to reject people at that point…it was quite a wrestle that we had to*

resolve that issue to comply with the building owner's requirements, the neighbours requirements, 9b[1] and security operation of the bar." (DES)

3.1.2 Layout and Means of Circulation

Each of the participants identified that efficient circulation was important for a nightclub to run smoothly. They described that the layout of spaces (e.g. dance floor, bar, seating etc.) within a club must allow for ambience, visual permeability and surveillance, and ease of circulation, one participant stated:

"surveillance in lines of sight are always important, try and reduce the amount of long narrow corridor for lots of patron circulation…try to create wide open spaces, broader rather than long and narrow where possible." (DES)

All addressed issues of congestion and violence associated with vertical circulation. Although it became apparent that the location of stairs played a major role in congestion of circulation. A comparison of case studies indicated that when stairs did not conflict/interfere with the main path of circulation, congestion was reduced. A variable that influenced this situation was capacity of the venue and the volume or patrons moving between spaces, one participant described the situation as: *"you're talking about dozens of people at one time trying to get in through that bottleneck"* (DES). A participant from the management domain suggested that this situation could be resolved by introducing more access points into highly used spaces. Another participant commented that:

"the more options people have to get up and down, the more surveillance is often required. So controlling the way people move around in this space to some degree [is] sometimes advantageous." (DES)

These contrasting perspectives were a common thread throughout a majority of the data gathered and were underlined by the emergent themes.

When discussing circulation both participants from the design domain were increasing focused on how site constraints impacted on available space and in turn layout and circulation of a venue. In both cases the nightclubs were the result of retrofitted spaces, one participant commented:

"the space, it's not a new building we're designing… you have to go with the space that's there. We worked it out on computer, it they stick to their limits, their capacity limits then it works." (DES)

Other variables that influenced the layout were building codes, client requirements, building owner requirements and fire safety requirements. The data indicated that due to drawbacks of site limitations the final design was not always the best solution. When asked about weakness brought to the design in terms of layout and circulation, participants from the management domain highlighted the issue of 'blind spots' that hinder security, so additional security guards or cameras become a *"very strong requirement in terms of any sort of crime or issues with recording any unruly patrons"* (MAN). During the interviews the majority of the participants stated that there were no specific points where assaults were most likely to break out however is was typical for them to occur on the dance floor or near the bar as patrons tended to congregate in those areas. A participant from the management domain made a statement that supported this fact:

"…I don't think you're ever going to gauge what is going to happen. If people are just going to bump into each other or you know, who's going to call someone something and…wherever there's an action there's a reaction. So it can be anywhere." (MAN)

Contrasting perspectives were once again evident when the data concerning circulation indicated that open spaces within nightclubs allowed for clear sight lines critical for visual security, patron safety and ease of circulation however adversely made it difficult to create the desired ambience preeminent to venue success.

3.1.3 Lighting

Participants found that lighting was a crucial element in the physical design of nightclub. It is used to create the desired ambience for the specific venue type having an effect on the overall atmosphere and patron experience. Each of the participants was aware that it is an adjustable element that can be changed to suit the night (music type and function of the space) and the target demographic. A participant from the management domain communicated that lighting is used as a security feature to disperse groups of gathered people from areas that can hinder circulation and deter certain types of unwarranted behaviour, such as: sexual liaisons, taking drugs and behaving outrageously. The participant stated that: *"dark and so forth is definitely a problem because certain people, they'd definitely do something stupid as people can't see them"* (MAN). The issue of lighting being misused to mask inappropriate behaviour to attract particular demographics was made known when the comment below was made:

"…there's a certain lighting level where you shouldn't go below. Otherwise you are not going to see things happening, people feel like they can get away with pretty much anything they want. So you need to have the balance between so people feel comfortable and not like they are under a spot light, but also light enough so it's safe and you are not going to get increases in trouble or crime." (MAN)

When asked which elements were most influential and significant to the physical environment of a nightclub, all participants stated that the success of any venue depends on its atmosphere which is directly influenced by lighting. Participants from the design domain insisted that clients/owners need to be informed of the importance and implications of good/bad lighting as it is as fundamental as the planning of the venue layout. When discussing the role of lighting in creating atmosphere in specific spaces participants from the design domain stated that:

"…there's a lot of psychology involved…because people have to feel good you know, they have to look, think they are looking great…in the end this is about males and females interacting, no matter what anyone says about the music and all that stuff, in the bottom line it's courtship." (DES)

"…people behave relative to their environment you know. The senses are being manipulated one way or another by the environments so that sort of atmosphere that place creates it definitely has an effect on people's behaviour." (DES)

3.2 **Design Management Factors**

Design Management includes such factors as the effect of the type of establishment, the effect of the client/owner and the effect of building codes and development approvals on planning and the design process.

[1] Building Code of Australia (BCA) classification and building codes for assembly buildings.

3.2.1 Design Process

From initial discussions, it was apparent that the majority of participants for this study acknowledged that clients had great influence on the design of a nightclub. Participants from the design domain agreed that it is crucial in understanding the client's agenda as the initial direction of the aesthetic and concept design are client driven, stating that: *"the first thing you've got to meet your client and really understand what the client's desire is, what are they trying to achieve"* (DES).When discussing design development participants from the design domain were increasingly focused on early planning to create flexibility within the design and aesthetic. One participant commented that:

> *"...resolve the planning first, understanding what the aesthetic is, because that always comes through the process, then you can layer up the information and the design and aesthetic once there is some solidity with the direction of the planning, Until there, you're speculating what the final outcome is likely to be because it could change and it always does."* (DES)

As the above states, aesthetics play a significant role at informing the development of a nightclub's design. However, they also were felt to be a hindrance as clients are typically unaware of the additional costs involved to achieve the various qualities of different spaces. A participant from the design domain reflected on a client's attitude towards lighting:

> *"...the client didn't want to pay for the real wiz bang system that does amazing things during the night – one of the clients, his famous quote was 'do we need lighting?' That's the position they were coming from. So for them to spend like $200,000 on lighting was a big deal, when [he] thought that we didn't even need any."* (DES)

Costs to develop the various qualities of different spaces within a nightclub typically include building services such as air-conditioning, electrical, lighting and fire safety, all aspects that impact on building compliance. One participant made a statement that supported the fact that aesthetics can become a hindrance in design development:

> *"quite often an aesthetic can influence a lot of the safety planning and we have to make sure that any kind of change still maintains compliance. So it can be an evolving matter."* (DES)

3.2.2 Compliance

When asked what planning constraints impacted the most on venue layout all participants identified equity of access (or disabled access) and were well aware of the significance of fire safety in nightclubs, stating that:

> *"...everything revolves around fire in a nightclub which understandably it should."* (MAN)

> *"...alcohol and life safety are always a big hindrance so the fire brigade are very strict on what we are trying to create in these spaces because at the end of the day they are the guys who have to go in and fight the fire if there is a problem."* (DES)

During the interviews the participants from the design domain highlighted the importance that before any design work can begin designers must have an understanding of the planning constraints in order to understand what type of licensing application is required and what implications it will have on any sort of code or Building Code of Australia (BCA) requirements in terms of exiting. Both participants commented that the majority of clients are unaware how different licences impact on various building codes and development approvals, with one participant stating:

> *"They're all interconnected but you may not be aware of it. The outset sometimes you have to work with your client and say – look if you are going to go down this path then that might have an implication on a kind of licence and the kind of use or more exits."* (DES)

When asked what factors were the greatest influence on planning and compliance, a participant from the design domain commented that the key design drivers for a nightclub were: *"knowing the functionality of it and the kind of clientele and type of license they [client] want..."* (DES).

4 DISCUSSION

There is extensive literature in which aggression, violence, public disturbances and assaults internally and in proximity of nightclubs is discussed (refer to the review of Koleczko & Garcia Hansen, 2011). A fundamental assumption of various studies found that no single factor, not even the level of intoxication could alone or directly affect the reduction of violence in licensed venues (Koleczko & Garcia Hansen, 2011). However, these studies focused on patrons, management and situational variables approached purely from an ethnographic or alcohol-studies perspective. This current article has set out to report on a series of interviews with a practicing interior designer and architect, and two venue managers to create awareness and discern specific design elements within nightclub environments that lead to the reduction of aggression and assault. Current evidence supports the conclusion that there are a number of specific design elements associated with elevated patron aggression and assaults. These elements have been considered under the following main headings: physical environmental characteristics and design management factors. The observed findings of the study are noted in results section of this article.

Not unsurprising, given the multi-domained nature of this study, participants from different domains had varying ways of viewing, interpreting and understanding, which was reflected in their perceptions of how each specific design element influenced patron aggression and assault.

4.1 Nightclub Environments

Nightclubs and bars do not only sell liquor they sell entertainment, excitement and perhaps inadvertently spaces for strenuous activity, for meeting others, sexual liaisons and generally for behaving outrageously with relative freedom. From a designer's point of view clients need to have idea of what demographic they want to attract and the type of venue they want to create if they are to successful cater for the needs of the patrons. The designer's role is not only to facilitate the quality of the spaces and the intention of the design but to create flexible environments that adapt to the various activities that occur in nightclubs. Taking drugs and becoming thirsty, being incessantly uncomfortable after standing for a long period, becoming deafened by loud music, being crushed by a crowd, or simply growing tired, can have negative effects on patron behaviour. Yet planning an environment that can reduce these effects is crucial as Homel et al. (2004, p. 20) have stated: "It is not necessary to be drunk – no one in the place has to be drunk – to encounter danger on the dance floor or bullies at the bar."

4.2 Venue/Site Limitations

The problem that has been identified in this line of research over a decade ago (Hauritz et.al, 1998; Homel & Clark, 1994; Lang et.al, 1995; Macintyre & Homel, 1997), is the 'total environment'. This

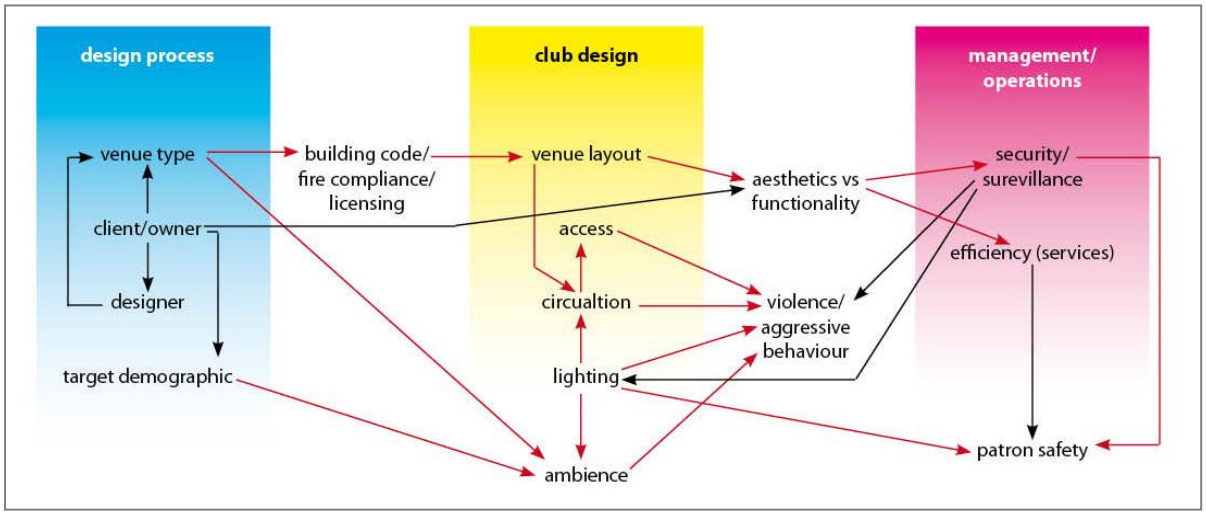

FIGURE 01: Inter-relating elements of the physical environment

study focuses on a fragment of the problem that is directly observable: the physical environment of nightclubs. The point is that alcohol is not the sole contributing factor, it is the settings in which it is consumed that requires scrutiny. Of course, the sheer size of an establishment would be a significant factor in predicting violence, simply because more people engage in more interaction, however the greatest implication on venue layout is fire safety as it dictates many space requirements such as number of exits, size of exits and location of exits. Participants from the design domain stated that clients would typically select a site and be unaware that in order to achieve their desired concept the building structure or services would need to change in the process, requiring specialist consultant advices to attain building compliance.

4.3 **Client Influence**

In general the data suggests that designers are continually battling with clients, in terms of working with them, advising them about the implications of their decisions. Budgets greatly influence client decisions, many oblivious to the true expense of designing a nightclub. Architects are engaged for compliance first, then interior design for aesthetics, responsible for managing the two so they can collectively co-exist. Throughout the design process designers must coordinate consultant input, requirements of private certifiers in terms of compliance levels and amend the design accordingly so, yet if the client does not have understanding of this process they can hinder the initial planning and in turn affecting the final outcome.

4.4 **Design Process**

The participants from the design domain stated that one of the first common faults when designing nightclubs occurred during the initial concept stage. Fig. 01 illustrates the inter-relating elements of the physical design that influence patron violence, stemming from the design process. The participant addressed that clients were driven by interesting agendas and ethereal goals not necessarily focused on whether it was appropriate to that particular venue or the compliance factors involved when designing a nightclub. This misplaced emphasis on aspects that are ultimately about the psychology and atmosphere and not functionality and planning can be linked to why bars and clubs fail so often. However, if there is a very strong idea behind the initial concept design from an early stage of the initial planning, a brief can be formulated that isn‘t just driven by an essence of an idea but an understanding of compliance and site constraints.

4.5 **Congestion and Circulation**

The analysis continued to illustrate that aesthetics were more consequential to the success of the physical environment than circulation and patron safety. The participant from the management domain stated that heavy monitoring with security is used to compensate for compromises, such as blind spots and inappropriate placement of seating, that complicate the configuration that tend to led to violence when the venue becomes busy. It is noteworthy that this link with crowding and inappropriate pedestrian flow patterns is similar to that identified in the study by Homel and Clark (1994). Analysis conclusively proved and supported prior studies (Macintyre & Homel, 1997) that violence stemmed partially from crowding that was linked to inappropriate pedestrian flow patterns caused by poor location or entry and exit doors, dance floors, bars and rest rooms. Results regarding vertical circulation in the form of staircases also proved to hinder circulation if placed within the main path of circulation. Congestion would be caused by multiple factors such as the volume of patrons utilising the staircase to access different areas, in doing so crossing paths and the congregation of patrons at the bottom and top of the staircase abetting the formation of bottlenecks.

4.6 **Safety and Layout**

The management point of view regarding compromise between operational and design priorities is consistent with existing studies (Plotkin, 2005). The analysis confirms that the configuration of the physical design of nightclubs must allow for unrestricted views of the guest and should permit them to move freely not hindered by crowds along their path of circulation. Yet, not all participants viewed this compromise in configuration a significant role or responsibility to ensure safety and peak operational efficiency. The participants from the design domain gave conflicting views stating that if management did not exceed the max capacity of the venue circulation would not be hindered by the layout or placement of architectural or elements, e.g. seating. Results regarding the relationship between seating and congestion confirmed that seating located within the main path of circulation led to possible cases of aggressive behaviour which suggest generally that due to the gathering of patrons around these areas congestion would encourage this type of behaviour. Ensuing results also implied that the size of the access points to various areas within a club likewise proved to be pinch points within the layout as they indicated the maximum volume of people that could pass through that threshold into the area beyond. These situations were perceived to be caused by unforseen excessive use by the designer and the venue manager exceeding capacity to maintain venue atmosphere.

4.7 **Atmosphere and Lighting**

The atmosphere of the establishment, based on aesthetics, can affect type of patrons who use a bar and also their behaviour. Venue layouts that tend to be really dark provide the impression that bad behaviour is tolerated. Such permissive environments, where patrons believed they could act aggressively lighting was inadequately used. As a temporary ‗fix' to these problem areas, participants from the management domain have stated that they use spot lights to deter certain unwarranted behaviours. Results regarding the relationship between lighting and patron behaviour suggest that well lit nightclub environments not only create flexibility within the design in terms of adaptable spaces that cater for various demographics but moreover affect patron enjoyment as inconspicuous and indirect lighting tend to make people look more beautiful resulting in increased self-esteem and confidence. The link between lighting and the reduction of patron violence identified in the analysis and previously by Homel et al. (2004) sharpened this study's focus on the three most important physical environmental characteristics that influence patron aggression.

4.8 **Risk Factors**

In existing studies where changes to the environment and management were caused by interventions (Homel et al., 2004), detailed investigation into whether the physical environment played a significant role in the reduction of aggression was not considered. Current evidence supports the conclusion that a number of elements of the physical environment influence elevated patron aggression and assaults. The risk factors associated with the physical environment and atmosphere included the following: aggression, violence and expectations of violence. The characteristics associated with these risks were crowding, ‗permissive decorum', configuration of layout, inappropriate pedestrian flow patterns, inadequate lighting, compromised bar functionality, restricted visual security and misplaced focus on venue and demographic psychological needs.

5 CONCLUSION

The main aim of this study was to understand how people experience and respond to the physical environment of nightclubs and how these spaces influence their behaviour. This study is significant in gaining an understanding on how specific elements of the physical environment of nightclubs have an impact on elevated patron aggression and assault. Previous studies have not discussed or proceeded with investigations into the design process of these environments. This study alone illustrates many factors that greatly influence the final design on these venues, these include: building codes, site constraints, client budgets, licensing requirements, certification, development approvals, fire compliance and the list can continue. However, due to the exploratory nature of this project conclusive findings cannot be reached. However, evaluation of the design and construct process suggests that current and existing problems surrounding venue safety and patron violence are not simply outcomes due to poor management and alcohol abuse but stem as far back to the concept stage of the design process. Hence responsible serving may conflict with profit and services motives of bar owners and servers (Graham et. al, 2004), so environmental changes to reduce aggression should be easier to market to bar owners than interventions that focus primarily on serving less alcohol. The focus of this study is to create awareness among the design industry, venue managers, the hospitality industry and future venue owners, that more in-depth research about discerning which specific physical environmental variables influence patron safety which would lead to the reduction of aggression and assault in licenced venues.

6 LIMITATIONS AND FUTHER RESEARCH

Some of the findings reported above may be applicable to other settings, but some maybe not. This study was confined to English language reports and conducted in an English speaking culture, also within a single part of the city (Fortitude Valley, Brisbane) that differs considerably from other parts of the same city as well as from entertainment districts in other cities. There are clear cultural variations between drinking cultures and drinking patterns in different countries. In spite it is apparent that several studies have found that variables, in particular, aggression and violence (Macintyre & Homel, 1997), were associated with the physical environmental design of nightclubs. It would be unwise to utilise the results of these analyses as an infallible guide to regulatory practice as this study was based on a limited collection of data. Moreover, although the analysis of influential physical environmental indicators of patron aggression is valuable to the industry, a strategy still falls short of an experimental design of probative value. Indeed, sensible research strategy would be to now replicate and further extended data collection with a more detailed approach based on the findings of this paper. Such collection would require active cooperation interviewing architects; designers; club owners; venue managers; bar tenders; DJs; and consumers nationally and internationally.

7 REFERENCES

Hauritz, M., Homel, R., McIlwain, G., Burrows, T., & Townsley, M. (1998). *Reducing Violence in Licensed Venues: Community Safety Action Projects: No. 101. Trends and Issues in Crime and Criminal Justice*. Canberra: Australian Institute of Criminology.

Homel, R., Carvolth, R., Hauritz, M., McIlwain, G., & Teague, R. (2004). Making licensed venues safer for patrons: what environmental factors should be the focus of interventions. *Drug and Alcohol Review, 23*(1), 19-29.

Homel, R., & Clark, J. (1994). The prediction and prevention of violence in pubs and clubs. In R. Clarke (Ed.), *Vol. 3. Crime Prevention Studies* (pp. 1-46). Monsey, NY: Criminal Justice Press.

Homel, R., Hauritz, M., Wortly, R., McIlwain, G., & Carvolth, R. (1997). Preventing alcohol related crime through community action: The Surfers Paradise safety action project. In Homel, R. (Ed.), *Policing for prevention: reducing crime, public intoxication and injury: Vol. 7. Crime Prevention Studies* (pp. 35-90). Monsey, NY: Criminal Justice Press.

Koleczko, K., & Garcia Hansen, V. (2011). Dangers of the After-Dark Wonderlands: Part A - A Review of the Impact of Physical Environment Design on Nightclub Violence. In C.J.L. Cowled (Ed.), *Proceedings of the First International Postgraduate Conference on Engineering, Designing and Developing the Built Environment for Sustainable Wellbeing* (pp. 8-12). Brisbane: Queensland University of Technology.

Lang, E., Stockwell, T., Rydon, P., & Lockwood, A. (1995). Drinking Settings and Problems of Intoxication. *Addiction Research*, *3*(2), 141-149.

Macintyre, S., & Homel, R. (1997). Danger on the Dance Floor: A Study of Interior Design, Crowding and Aggression in Nightclubs. In R. Homel (Ed.), *Policing for prevention: reducing crime, public intoxication and injury: Vol. 7. Crime Prevention Studies* (pp. 91-113). Monsey, NY: Criminal Justice Press.

Plotkin, R. (2005). The art of compromise: getting bar design right can be a challenge. *Cheers, 2005*(September), Retrieved March 21, 2009, from http://findarticles.com/p/articles/mi_m0BQE/is_7_16/ai_n15633704